

ORIGINAL

STAFF MEMORANDUM

To: THE COMMISSION

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From: Steven M. Olea
Interim Director
Safety Division

2012 MAY -8 A 8:41



Arizona Corporation Commission
DOCKETED

Date: May 8, 2012

MAY 08 2012

RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA DEPARTMENT OF
TRANSPORTATION TO UPGRADE AN EXISTING CROSSING OF THE UNION
PACIFIC RAILROAD AT PALO PARADO ROAD, IN OTERO, SANTA CRUZ
COUNTY, ARIZONA, USDOT NO. 742-018-J. JM.

DOCKET NO. RR-03639A-12-0086

Background

On March 7, 2012, the Arizona Department of Transportation ("ADOT") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to upgrade an existing crossing at Palo Parado Road, in Otero, Santa Cruz County ("County"), Arizona at USDOT No. 742-018-J.

The Safety Division's Railroad Safety Section ("Staff"), ADOT, the County and the Railroad participated in a diagnostic review on May 2, 2007 to discuss the proposed improvements to the Palo Parado Road crossing. All parties present were in agreement to the proposed improvements at the crossing. The following is a break down of the crossing in this application, including information about the crossing that was provided to Staff by ADOT.

Federal Highway Administration ("FHWA") Section 130

This project is federally funded pursuant to 23 U.S.C. § 130 ("Section 130"). The purpose of Section 130 is to comply with legislation seeking to eliminate hazards to pedestrians and highway vehicles at public railway-highway crossings. Only crossings which are located on public roads, and which are not primarily for the benefit of the railroad, are eligible for Section 130 funding. In order to be eligible for Section 130 funding, a crossing must be designated on the Commission's annual Crossing Array as being a priority to receive safety upgrades. Arizona Revised Statute § 40-337.03 states that:

[T]he commission shall submit to the railroad involved and the city, county and department of transportation in which jurisdiction a public railroad grade crossing is located, an array of such crossings where the installation of automatic warning signals or devices should be considered during the year, or within a reasonable time thereafter depending upon the availability of monies, materials, labor and other factors involved in such installation.

This project was approved for Section 130 funding as part of the 2009 Commission Annual Array approved by Decision No. 71309, dated October 30, 2009. After designation on

the Annual Array, FHWA issues authorizations for design and construction of each project, reimburses ADOT for the cost and conducts a final inspection of each project. The Railroad will invoice ADOT for 100% of the cost of the project.

Palo Parado Road

Palo Parado is an east-west roadway, consisting of one lane in each direction. Currently, this is a passive crossing consisting of cross-bucks and stop signs. The proposed new project consists of installing state of the art LED flashing lights, automatic gate arms, bells and Constant Warning Time circuitry. The proposed measures are consistent with safety measures employed at similar at-grade crossings in the State. The estimated cost of the project is \$206,115.00 funded entirely by federal funds. The Railroad will maintain the warning devices after the upgrade is completed.

Traffic data for Palo Parado was provided by ADOT. The data shows the Average Daily Traffic ("ADT") for 2008 to be 1,000, vehicles per day ("vpd"). The current Level of Service ("LOS") for Palo Parado is LOS B.

The American Association of State Highway and Transportation Officials ("AASHTO") Geometric Design of Highways and Streets, 2004, states that the Level of Service characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be.

The posted speed limit on Palo Parado is 30 MPH. Staff records, as well as Federal Railroad Administration ("FRA") accident/incident records indicate no accidents at this crossing.

Alternative routes from this crossing are as follows; to the south approximately 4.4 miles is Rio Rico Drive. There is no immediate access across the tracks to the north of this crossing.

Train Data

Data provided by the Union Pacific regarding train movements through this crossing are as follows:

Train Count: average of 5 trains per day (all freight trains/no passenger trains)

Train Speed: 25 mph

Thru Freight/Switching Moves: All movements through this crossing are through freight movements.

Schools and Bus Routes

There are no schools located in the vicinity of the Palo Parado crossing.

Hospitals

ADOT gave the following response about hospitals and emergency services vehicles:

Per Santa Cruz County there are no emergency services vehicles that use this crossing at this point in time. The opening of this new crossing will allow quicker access of emergency vehicles to the adjacent neighborhoods.

One of the issues that brought this crossing up for safety improvements is that it was previously a private crossing that the public including emergency vehicles began using, which prompted UPRR to close the crossing due to improper use. Once the crossing was closed, local residents voiced concern primarily with the access for emergency vehicles and Santa Cruz County adopted the road as a public road in order to create a public crossing for access.

Hazardous Materials

ADOT gave the following response when asked about vehicles transporting hazardous materials through this crossing:

Per Santa Cruz County there are no vehicles carrying hazardous materials which utilize this crossing.

Zoning

Staff requested information regarding the type of zoning in adjacent areas from the crossing. The following was the response given:

The areas adjacent to the planned Palo Parado Road alignments are zoned General Rural (GR), which is a large lot (4.13 acres minimum lot size) residential zoning district. There is some General Business (B-2) zoning in the vicinity of the existing Palo Parado TI. The County Comprehensive Plan for this area is Ranch (R) which is a low density, low intensity land use designation.

FHWA Guidelines Regarding Grade Separation

The FHWA Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether highway-rail crossings should be considered for grade separation or otherwise eliminated across the railroad right of way. The Crossing Handbook indicates that grade separation or crossing elimination should be considered whenever one or more of the nine conditions are met. The nine criteria are applied to this crossing application as follows:

		Palo Parado
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The highway is otherwise designed to have full controlled access	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

	Crossing meets the criteria by 2030	No
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
An average of 150 or more trains per day or 300 million gross tons/year	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Crossing exposure (trains/day x AADT) exceeds 1M in urban or 250k in rural; or passenger train crossing exposure exceeds 800k in urban or 200k in rural	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Expected accident frequency for active devices with gates, as calculated by the US DOT Accident Prediction Formula including five-year accident history, exceeds 0.5	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A ¹
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

¹ N/A = Not Applicable

Grade Separation

Grade separation was not considered as part of this Section 130 safety upgrade.

Vehicular Delays at Crossings

Per Santa Cruz County, there are no significant delays at this crossing.

Another commonly used measure outlined in the FHWA Guidelines; the so-called Crossing Exposure Index (which is simply the product of the number of trains per day multiplied by the number of vehicles crossing daily) is not currently met at this crossing. The current crossing exposure is 5,000, far below the 250,000 threshold for rural areas. It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the FHWA, which serve to alert those having jurisdiction that potential problems may arise.

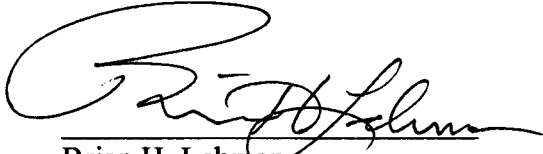
Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on existing conditions, the crossing in this application meets none of the nine criteria for consideration of grade separation. Therefore, Staff does not recommend a grade separation at the crossing.

Crossing Closure

The County recently adopted this roadway and made it a public road, after the UPRR had closed the crossing. Staff believes the County would not want to close the crossing at this time.

Staff Conclusions

Having reviewed all applicable data, Staff generally supports ADOT's application. Staff believes that the upgrades are in the public's interest and are reasonable. Staff believes that the measures proposed by ADOT are consistent with other similar at-grade crossings in the State and will provide for the public's safety. Therefore, Staff recommends approval of ADOT's application.

A handwritten signature in black ink, appearing to read "Brian H. Lehman", is written over a horizontal line.

Brian H. Lehman
Railroad Safety Supervisor
Safety Division

Originator: BHL

COPIES of the foregoing mailed
this 8th day of May, 2012 to:

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